

Name: _____

Date: _____

Exam: Function Reflections (Practice version 43)

1. Let function f be defined by the polynomial below:

$$f(x) = 9x^5 + 5x^4 - 6x^3 - 3x^2 - 2x + 7$$

Draw lines that match each function reflection with its polynomial:

Reflections

$-f(-x)$ •

$-f(x)$ •

$f(-x)$ •

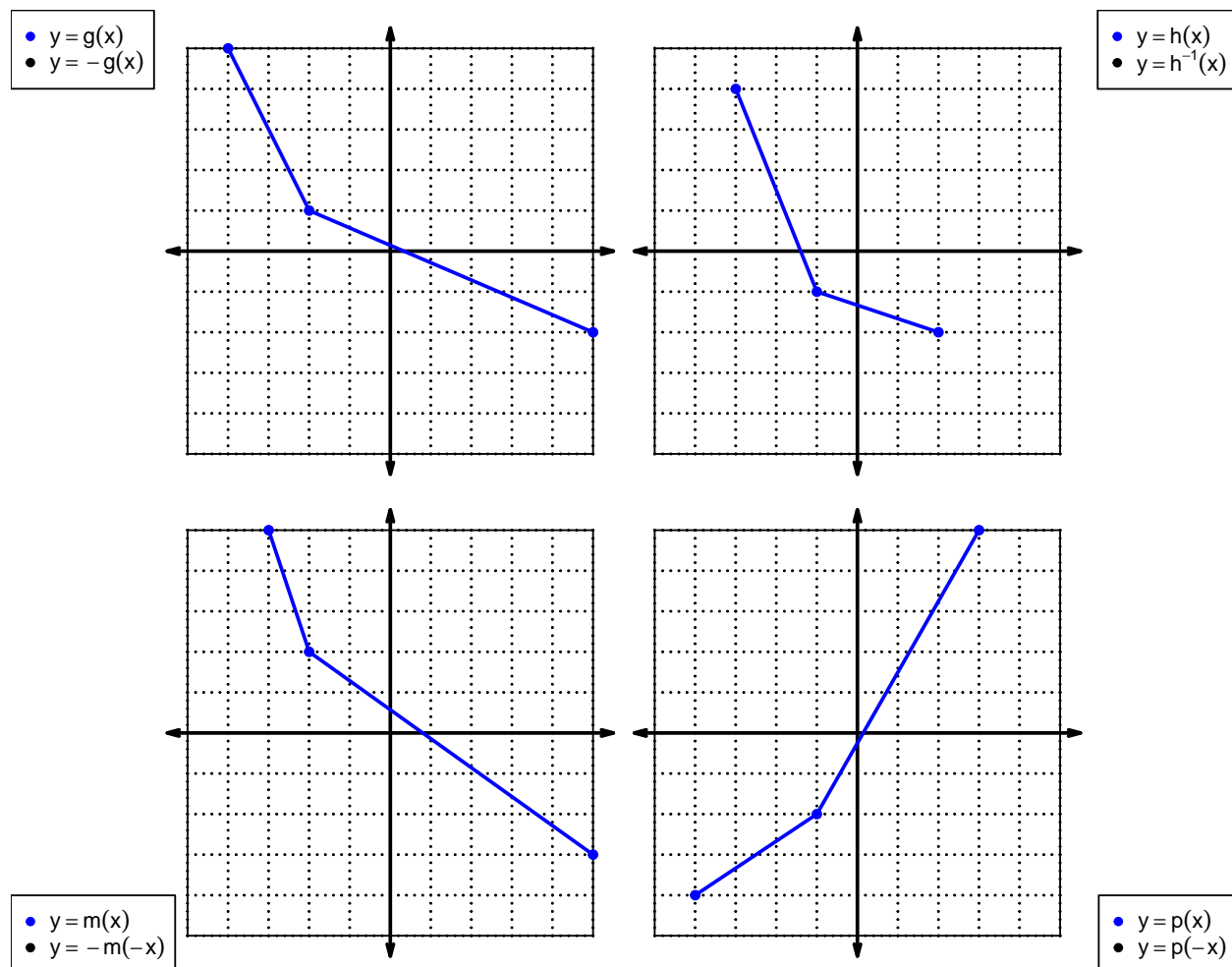
Polynomials

• $-9x^5 - 5x^4 + 6x^3 + 3x^2 + 2x - 7$

• $-9x^5 + 5x^4 + 6x^3 - 3x^2 + 2x + 7$

• $9x^5 - 5x^4 - 6x^3 + 3x^2 - 2x - 7$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



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For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	1	6	7
2	7	9	1
3	2	1	5
4	8	3	6
5	4	8	2
6	5	7	8
7	3	4	4
8	9	2	3
9	6	5	9

3. Evaluate $h(8)$.

4. Evaluate $f^{-1}(5)$.

5. By filling more rows of the table, it is possible to make function f **even**. If that were done, what would be the value of $f(-9)$?

6. By filling more rows of the table, it is possible to make function g **odd**. If that were done, what would be the value of $g(-4)$?

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7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^3 - x$$

- a. Express $p(-x)$ as a polynomial in standard form.

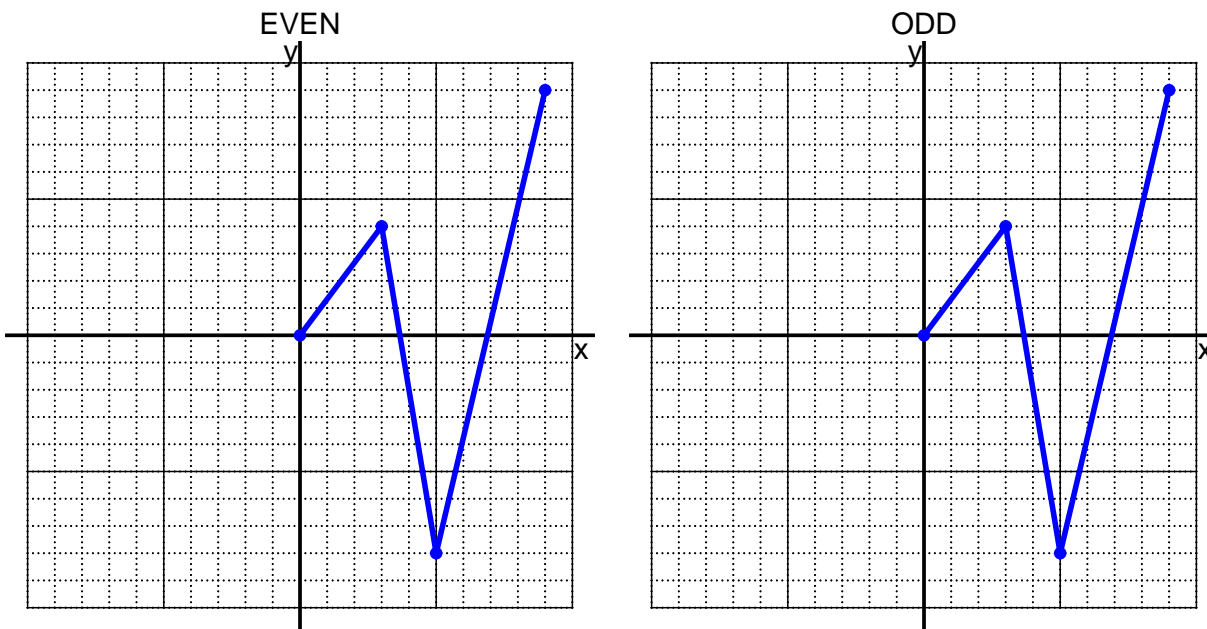
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

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8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

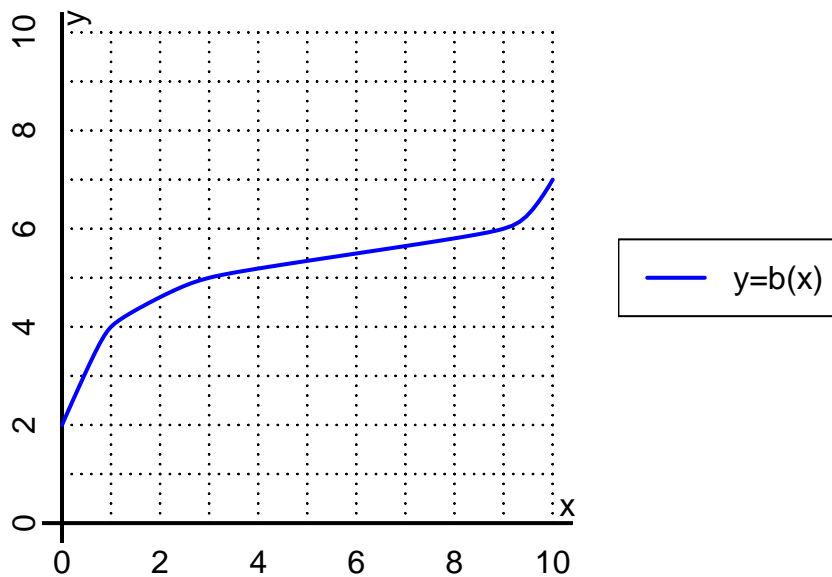
$$f(x) = 9x - 5$$

a. Evaluate $f(8)$.

b. Evaluate $f^{-1}(13)$.

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10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(3)$.

b. Evaluate $b^{-1}(4)$.

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11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	9			
-1	5			
0	0			
1	-5			
2	9			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?